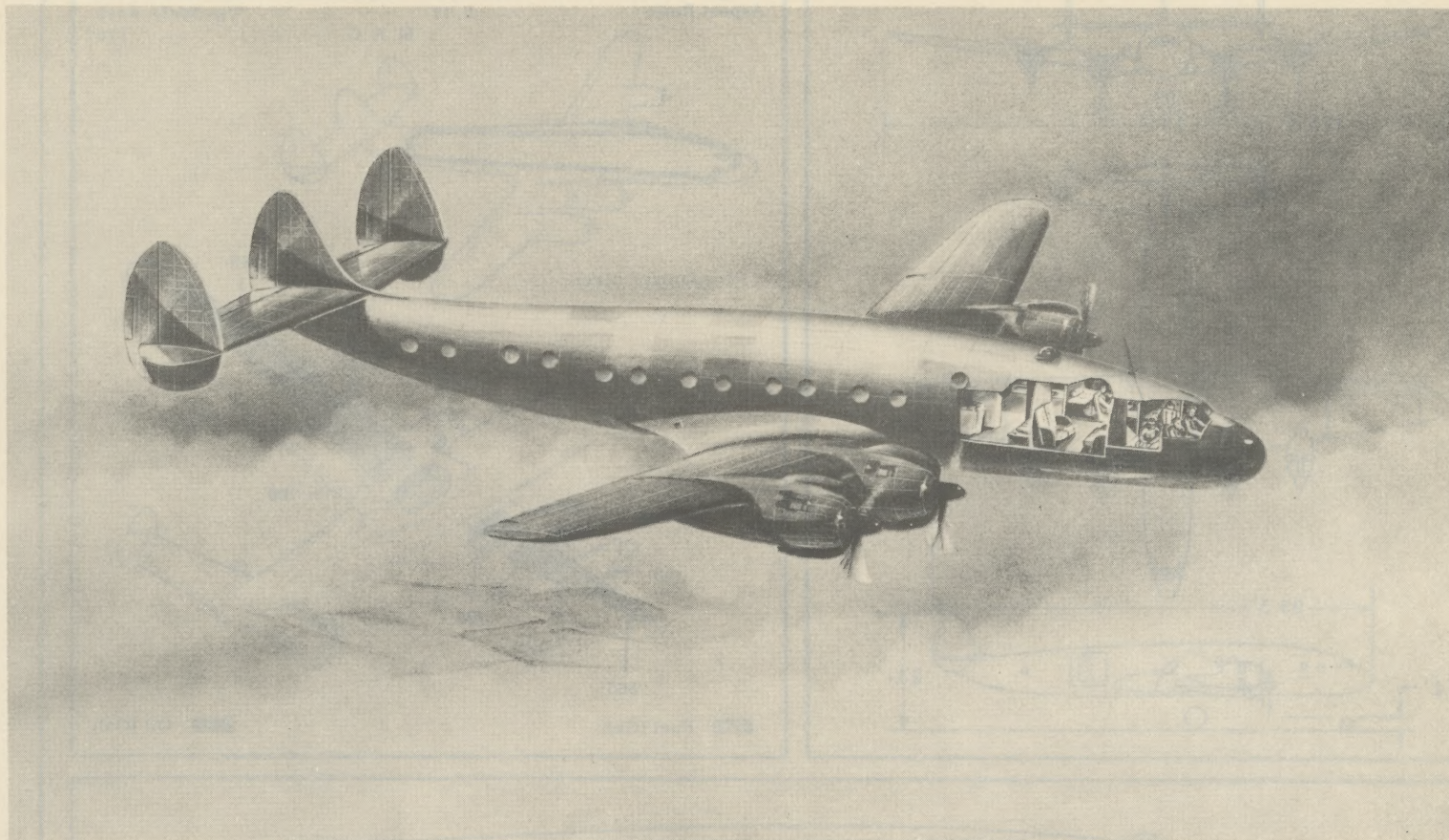


U N C L A S S I F I E D

SERVICE



## *Standard Aircraft Characteristics*

BY AUTHORITY OF  
THE SECRETARY  
OF THE AIR FORCE

**C-121A**  
**CONSTELLATION**  
**Lockheed**

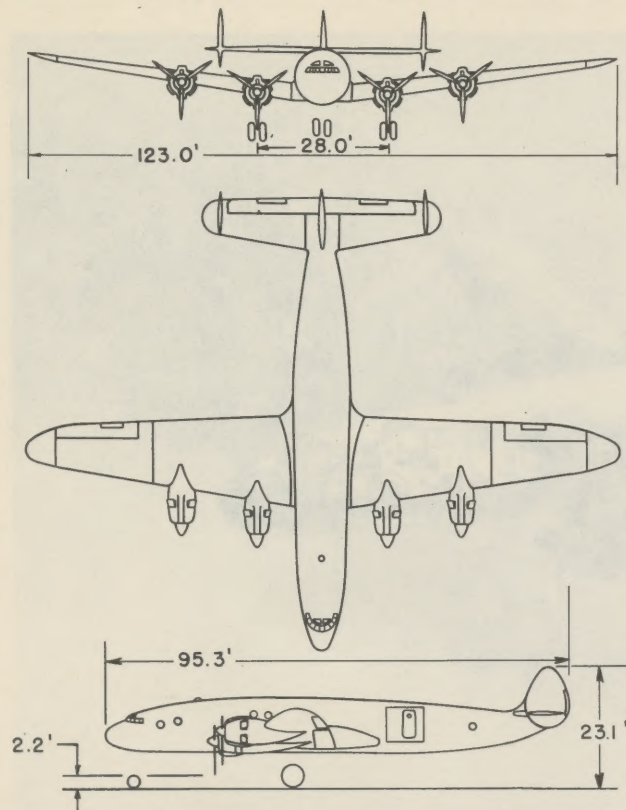
FOUR R-3350-75  
WRIGHT

5 JUN 58

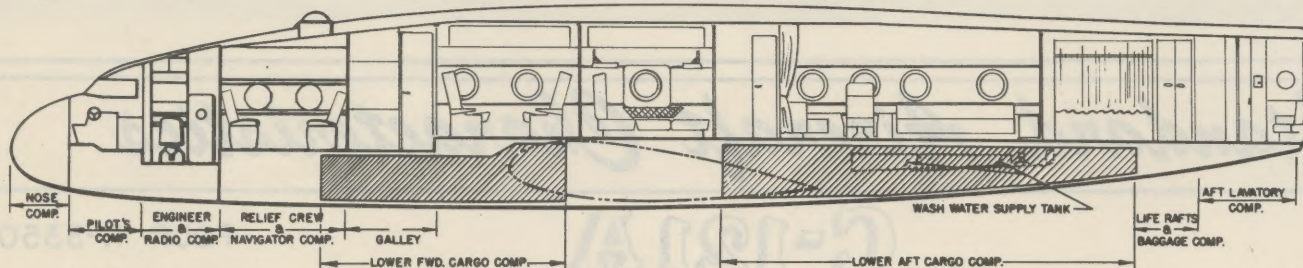
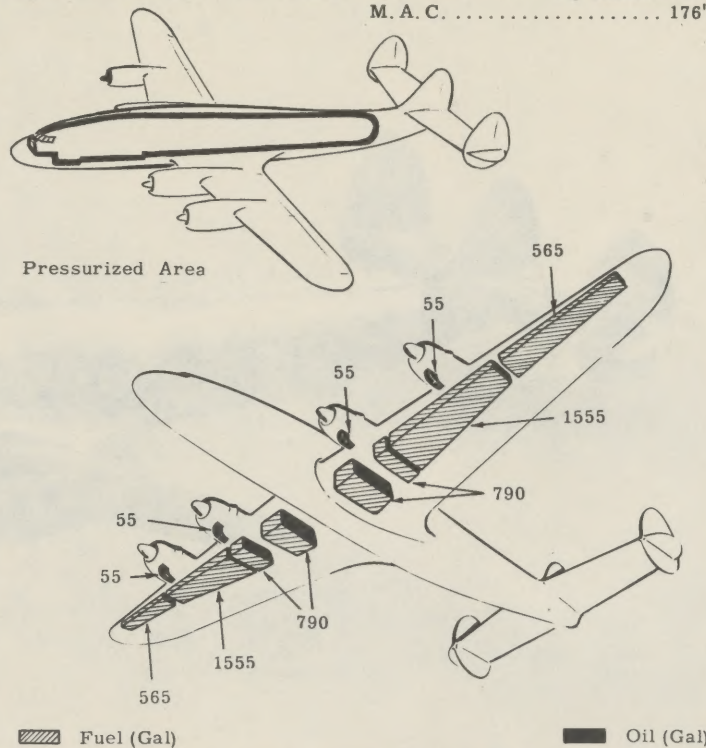
U N C L A S S I F I E D

C-121A





Wing area ..... 1650 sq ft. Wing Section ... Root NACA 23018  
 Aspect Ratio ..... 9.17 Tip NACA 4412  
 M. A. C. .... 176"



C-121A

UNCLASSIFIED

5 JUN 58



**POWER PLANT**

Nr & Model . . . . (4) R-3350-75  
 Mfr . . . . . Wright  
 Engine Spec Nr. . . . . 749-E  
 Superch . . . . . 1 stg, 2 spd.  
 Red. Gear Ratio . . . . . 0.4375  
 Prop Mfr . . . . . Curtiss  
 Blade Design . . . . . 830-21C4-0  
 Prop Type . . . . F. F, Revers, Elec  
 Prop Dia . . . . . 15'1"  
 Nr Blades . . . . . 3

**ENGINE RATINGS**

BHP - RPM - ALT - MIN

T. O: \*2500 - 2800 - S. L. - 5  
 \*\*1900 - 2600 - 15,700 - 5

Nor: \*2100 - 2400 - S. L. - Cont  
 \*\*1800 - 2400 - 16,000 - Cont

\* Low Blower  
 \*\* High Blower

**DIMENSIONS**

Wing  
 Span . . . . . 123.0'  
 Incidence (root) . . . . . 3°  
 (tip) . . . . . 1°  
 Dihedral . . . . . 7°36'  
 Sweepback (LE) . . . . . 7°30'  
 Length . . . . . 95.3'  
 Height . . . . . 23.1'  
 Tread . . . . . 28.0'  
 Prop Grd Clearance . . . . . 2.2'

**Mission and Description**

Navy Equivalent: None

Mfr's Model: 749

The principal mission of the C-121A is the transportation of personnel.

This aircraft incorporates hydraulic boost controls, pressurized cabin, nose gear steering, fowler type flaps, air conditioning, boot de-icing, windshield defogging and propeller anti-icing.

A galley is located in the forward part of the fuselage and cloak rooms are provided and may be used for stowing light baggage. Provisions for cabin attendants are also included.

**Development**

First Service Use . . . . . Dec 48

Production Completed . . . . . Mar 49

**WEIGHTS**

Loading	Lb	L. F.
Empty . . . . .	61,324 (A)	
Basic . . . . .	63,976 (A)	
Design . . . . .	†107,000 . . . .	2.5
Combat . . . . .	*78,400	
Max T. O(overload)	†107,000 . . . .	2.5
Max T. O(normal)	†107,000 . . . .	2.5
Max Land . . . . .	89,500	

(A) Actual

\* For Basic Mission

† Limited by strength (see note (b), page 6.)

**FUEL**

Location	Nr Tanks	Gal
Wgs, outbd . . . .	2 . . . . .	1130
Wgs, ctr . . . . .	2 . . . . .	3110
Wgs, inbd . . . . .	2 . . . . .	1580
	Total	5820
Grade . . . . .		100, 130
Specification . . . .		MIL-F-5572

**OIL**

Nacelles . . . . .	4 . . . . .	220
Grade . . . . .		1100
Specification . . . .		MIL-L-6082

**FEATURES**

Pressurized Cabin  
 Air Conditioning  
 Auto-Pilot  
 Reverse Pitch Props  
 Hydraulic Boost Controls  
 Fowler Type Flaps  
 Fuel Dumping System

**PERSONNEL**

Crew . . . . .	5
Pilot	
Co-Pilot	
Flight Engineer	
Radio Operator	
Navigator	
plus	
Relief Crew . . . . .	4
Passengers:	
Day Flights . . . . .	21
Night Flights . . . . .	14

**ELECTRONICS**

HF Command . . . . .	AN/ART-13A
Liaison . . . . .	AN/ARC-8A
Loran . . . . .	AN/APN-9
Radio Compass (2) . . . .	AN/ARN-6
Localizer . . . . .	RC-103A
Marker Beacon . . . . .	RC-193A
Glide Path . . . . .	AN/ARN-18
VHF Communication . . . .	AN/ARC-36
Low Alt. Altimeter . . . .	AN/APN-1
High Alt. Altimeter . . . .	SCR-718C
IFF . . . . .	AN/APX-6
Interphone . . . . .	AN/AIC-3
PA System . . . . .	MI-36
UHF Command . . . . .	AN/ARC-27
Transmitter Recv'r . . . .	Collins 6185-1
VOR Omni-Range . . . . .	AN/ARN-14
Search Radar . . . . .	AN/APS-42



# Loading and Performance—Typical Mission

C O N D I T I O N S			BASIC MISSION	NORMAL RANGE	MAX FUEL NORMAL	FERRY RANGE
TAKE-OFF WEIGHT		(lb)	I 100,520	II 107,000	III 107,000	IV 102,346
Fuel at 6.0 lb/gal(grade 100/130)		(lb)	21,994	28,474	34,920	34,920
Payload (outbound)		(lb)	11,100	11,100	4654	None
Wing loading		(lb/sq ft)	60.9	64.8	64.8	62.0
Stall speed (power off)		(kn)	84	87	87	85
Take-off ground run at SL	①	(ft)	2550	3000	3000	2680
Take-off to clear 50 ft	①	(ft)	3650	4300	4300	3800
Rate of climb at SL	②	(fpm)	1310	1170	1170	1270
Rate of climb at SL(one eng. out)	②	(fpm)	580	460	460	550
Time: SL to 10,000 ft	②	(min)	8.7	10.0	10.0	9.0
Time: SL to 20,000 ft	②	(min)	21.4	24.9	24.9	22.8
Service ceiling (100 fpm)	②	(ft)	24,400	23,200	23,200	24,100
Service ceiling (one eng. out)	②	(ft)	18,900	17,200	17,200	18,400
COMBAT RANGE	③	(n. mi)	2072	2646	3406	3563
Average cruising speed		(kn)	190	193	191	188
Cruising altitude		(ft)	10,000	10,000	10,000	10,000
Total mission time		(hr)	10.9	13.8	17.9	19.9
COMBAT RADIUS	③	(n. mi)	1000	—	1676	—
Average cruising speed		(kn)	188	—	191	—
Cruising altitude		(ft)	10,000	—	10,000	—
Total mission time		(hr)	10.7	—	17.6	—
FIRST LANDING WEIGHT	④	(lb)	89,500	—	89,140	—
Ground roll at SL		(ft)	1950	—	1920	—
Total from 50 ft		(ft)	3000	—	3000	—
COMBAT WEIGHT	④	(lb)	78,400	80,600	84,486	69,692
Combat altitude		(ft)	10,000	10,000	10,000	10,000
Combat speed	②	(kn)	269	268	267	268
Combat climb	②	(fpm)	1450	1390	1290	1880
Combat ceiling (500 fpm)	②	(ft)	24,800	24,300	23,500	26,700
Service ceiling (100 fpm)	②	(ft)	29,100	28,400	27,800	29,900
Service ceiling (one eng. out)	②	(ft)	24,300	23,700	22,800	25,100
Take-off ground run at SL	①	(ft)	1350	1450	1650	1000
Take-off to clear 50 ft	①	(ft)	1930	2070	2330	1400
Max rate of climb at SL	②	(fpm)	1900	1840	1710	2320
Max speed at 19,000 ft	②	(kn)	290	288	287	292
Basic speed at 25,000 ft	②	(kn)	282	281	279	288
LANDING WEIGHT	④	(lb)	69,040	80,600	69,622	69,692
Ground roll at SL		(ft)	1100	1580	1150	1150
Total from 50 ft		(ft)	2200	2650	2230	2230

NOTES

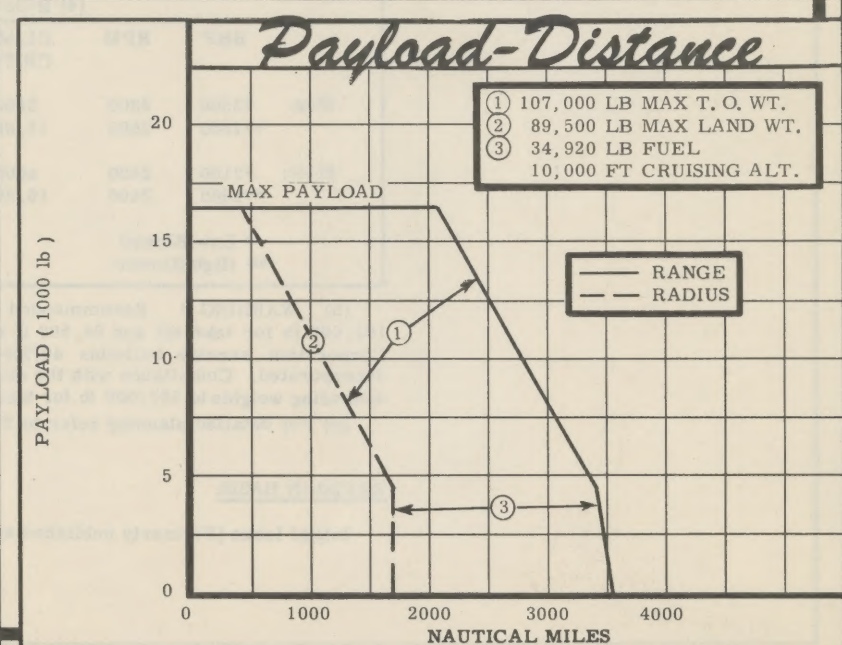
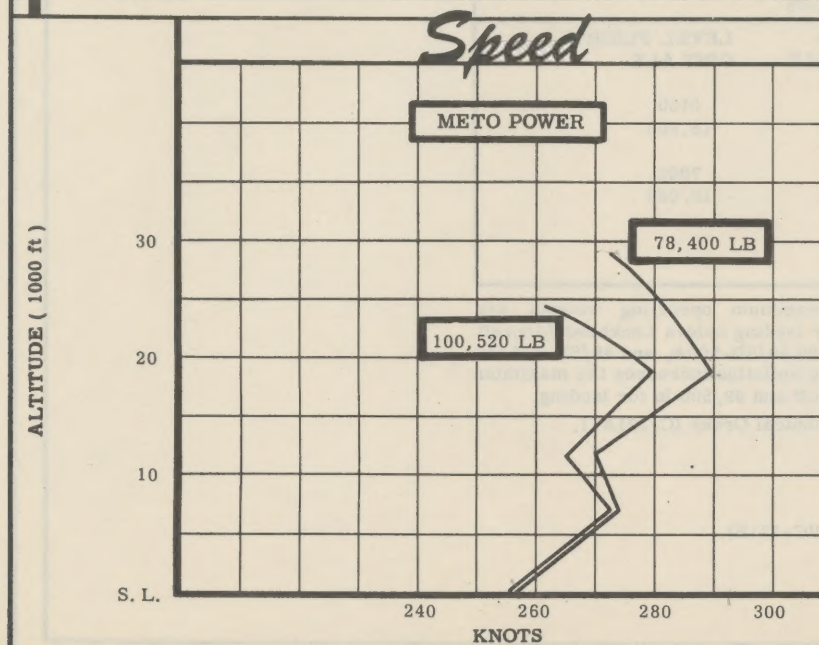
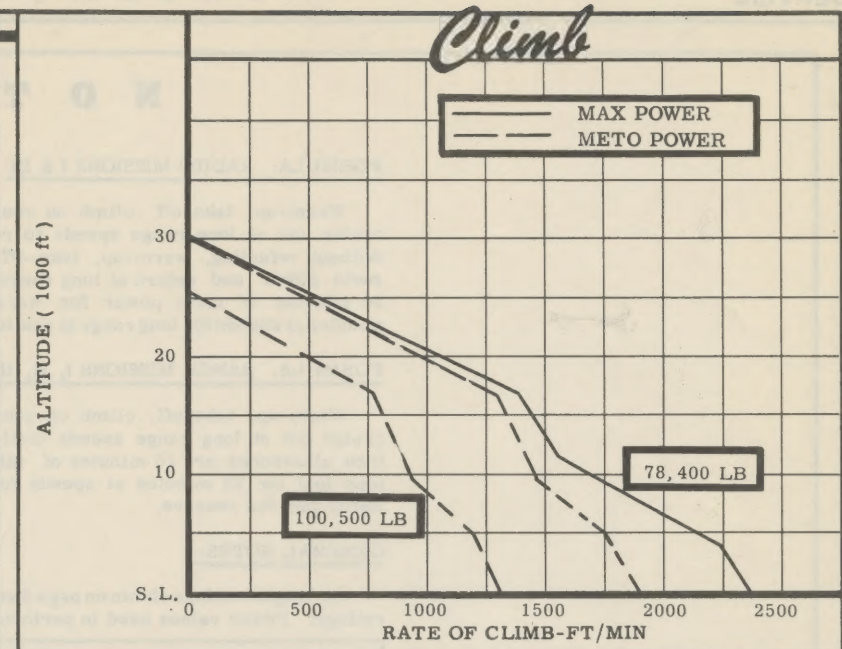
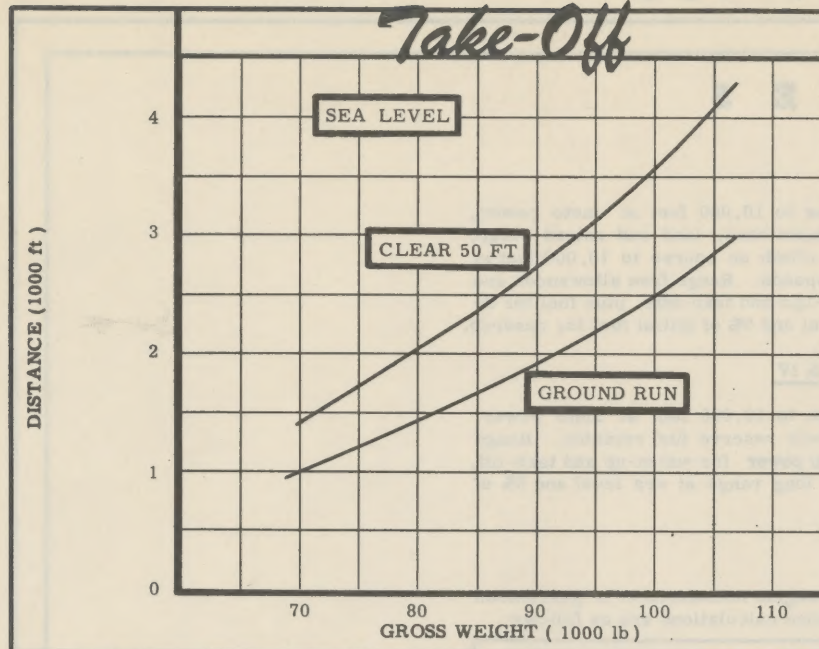
- ① Max power  
② Meto power

- ③ Detailed descriptions of Radius and  
Range Missions are given on page 6  
④ For Radius Mission if radius is shown

Performance Basis:

- (a) Data source: Flight Tests  
(b) Performance is based on powers shown  
on page 6.







U N C L A S S I F I E D

**NOTES**FORMULA: RADIUS MISSIONS I & III

Warm-up, take-off, climb on course to 10,000 feet at meto power, cruise out at long range speeds to remote base, land and unload cargo. Without refueling, warm-up, take-off, climb on course to 10,000 feet at meto power and return at long range speeds. Range free allowances are 20 minutes of meto power for warm-ups and take-offs, plus fuel for 30 minutes at speeds for long range at sea level and 5% of initial fuel for reserve.

FORMULA: RANGE MISSIONS I, II, III & IV

Warm-up, take-off, climb on course to 10,000 feet at meto power, cruise out at long range speeds until only reserve fuel remains. Range free allowances are 10 minutes of meto power for warm-up and take-off, plus fuel for 30 minutes at speeds for long range at sea level and 5% of initial fuel for reserve.

GENERAL NOTES:

(a) Engine ratings shown on page 3 are engine manufacturer's guaranteed ratings. Power values used in performance calculations are as follows:

(4) R-3350-75				
	BHP	RPM	CLIMB CRIT ALT	LEVEL FLIGHT CRIT ALT
Max:	*2500	2800	3800	6100
	**1900	2600	17,000	18,800
Meto:	*2100	2400	5000	7000
	**1800	2400	16,800	19,000
* Low Blower				
** High Blower				

(b) WARNING ! Recommended maximum operating weights are 102,000 lb for take-off and 84,500 lb for landing unless Lockheed Aircraft Corporation service bulletins 49/SB-500, 49/SB-500A, and 49/SB-545 are incorporated. Compliance with the above bulletins increases the maximum operating weights to 107,000 lb for take-off and 89,500 lb for landing.

(c) For detailed planning refer to Technical Order IC-121A-1.

REVISION BASIS:

Initial Issue (Formerly published as VC-121B).

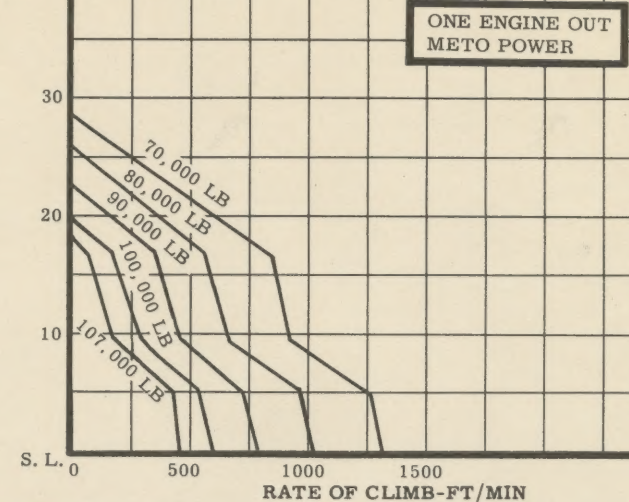
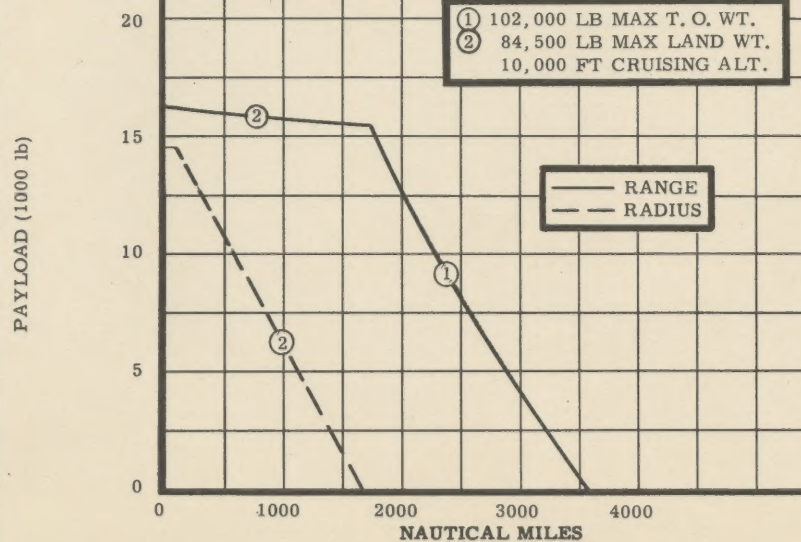
U N C L A S S I F I E D



## SUPPLEMENTAL

*Climb*

ALTITUDE ( 1000 ft )

*Payload-Distance*

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